BRIO®

Engineers Club NEWS

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Zachary and Michael on Track . . .

It started in a home in New York City. Zachary, who was about 2½ years old, began to learn about problem solving. He and his mother designed and built railway layouts, always using as much BRIO track as possible. Zack played 'engineer' to test it with a train. If the train got caught in a blind loop or could go in only one direction, the layout did not pass inspection. It was like figuring out a maze. Zack would often have an idea and ask his mother to help him. He noticed she sometimes just sat quietly, so he asked her what she was doing. She explained she was thinking and planning and trying to figure things out. Sometimes they discovered the first solution wasn't the best. Zack gradually learned that problem solving is a process of trial and error; a series of solutions; making mistakes; and hard work. It is also the satisfaction of finally finding a solution. Sometimes Zack sits quietly and when his mother asks him what he is doing, he says, "I thinking, Mommy . . . planning . . . let's have 'scussion about this."

At four, Zack has now expanded his designs to include vertical layouts with supports, bridges, and trestles. He uses some of his other toys in his railway environments. Says his mother, "We have been playing with BRIO trains and tracks for almost two years now, and the end is not in sight, . . . a delightful family activity."

It started in a class at Einstein Hospital in New York City. Michael, who is autistic, could not relate to objects or people, including his own mother. Through a program at the hospital, Michael was introduced to BRIO trains and made great progress in learning how to play. Out of love and with great patience, Michael's mother began to set up BRIO tracks every day in the clinic. Michael became very attached to the track layouts his mother would make—but he would just watch. Then things began to change and he added a train. He then became more involved in the track layout, always insisting that it have a beginning and no end—just one continuous track. That was a challenge!

Michael's family eventually bought him his own BRIO Railway. He plays with it every day at home. In fact, it is the only toy he plays with according to his mother who proudly tells us, "Michael now sets up his own tracks, truly wonderful tracks with hills and curves. He does a great job. All that time I spent setting up his track has paid off." Michael's older sisters, as well as his mom and dad, play trains with him. Michael's mom goes on to say, "These trains mean a lot to a little boy who two years ago did not even know who I was, . . . your toy has created a miracle and made a difference in someone's life."

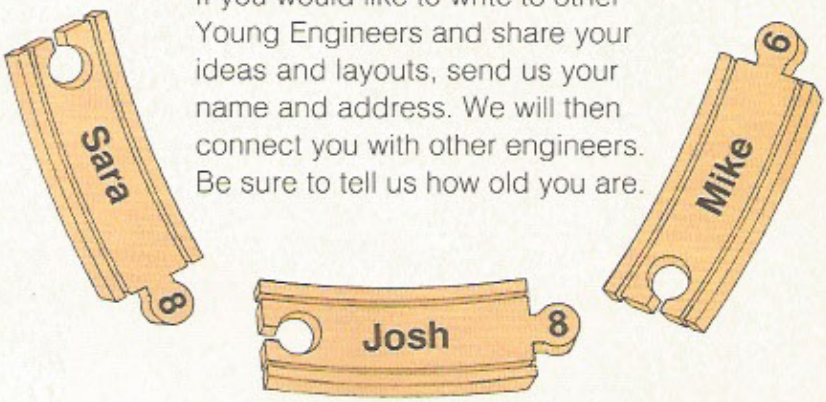
ESPECIALLY FOR BRIO ENGINEERS

Tracks Across the Country

Do you know . . .

. . . that BRIO produces 40,000 pieces of railway track a day? That is over 8 million pieces a year, and equal to about 750 miles of track per year. Just imagine the layout you could make with so many pieces!

If you would like to write to other Young Engineers and share your ideas and layouts, send us your name and address. We will then connect you with other engineers. Be sure to tell us how old you are.

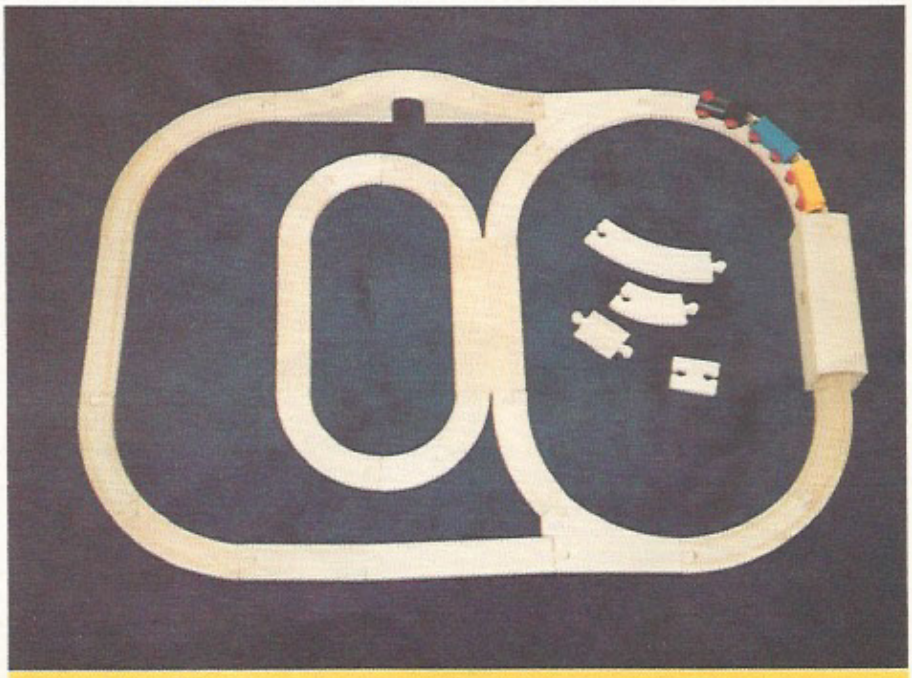


A Prize for SWITCHING & REVERSING

When you run the train around this layout, you discover the train will always go through the tunnel in the same direction. Can you re-arrange the tracks so the train can go through the tunnel in either direction? You can use the extra pieces of track shown in the photo. Remember, there is more than one way to improve upon this layout.

Pieces used:

2 mini straights-b2, c2
1 medium straight-a
3 long straights-d
9 short curves-e1
11 curves-e
1 switching & crossing-k
2 curved switches-1, m
1 tunnel
1 viaduct

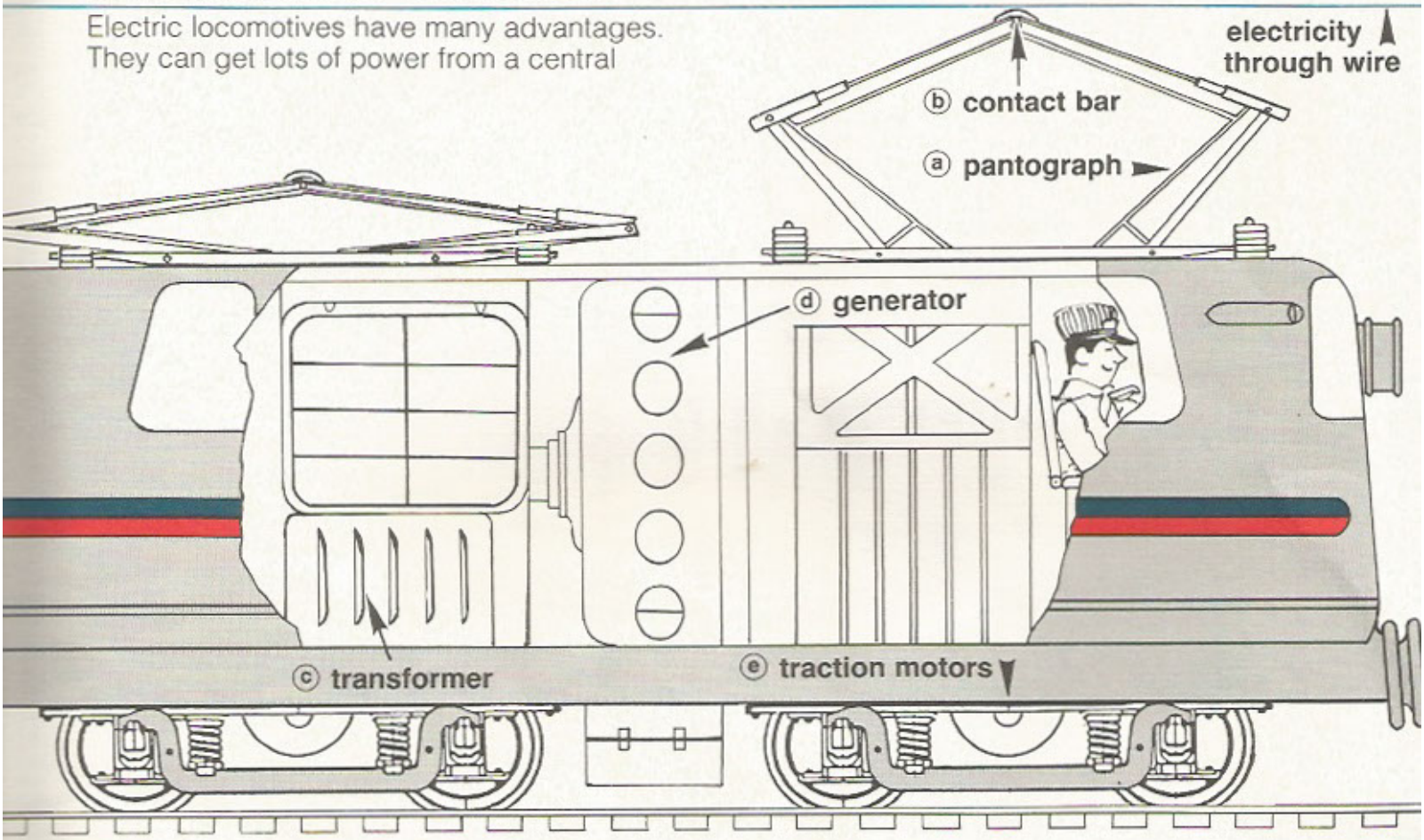


The first 10 engineers who send us their solution will receive a box of double curved switching tracks.

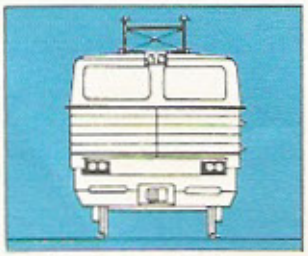
HOW AN ELECTRIC LOCOMOTIVE WORKS . . .

Electric locomotives are different than steam and diesel engines. They don't make their own power. They get electricity from a power plant through overhead wires or a third rail. A *pantograph* (a) holds a *contact bar* (b) against the wire carrying the electricity. A *transformer* (c) and *generator* (d) change the current so it can be used by the *traction motors* (e) which power the drive wheels.

Electric locomotives have many advantages. They can get lots of power from a central power plant. They are quiet. They don't give off smoke or any smelly gases. They can speed up quickly, so they are useful for trains that make a lot of station stops. They are very good for pulling trains in and around cities; for underground trains; and for travelling through long tunnels.

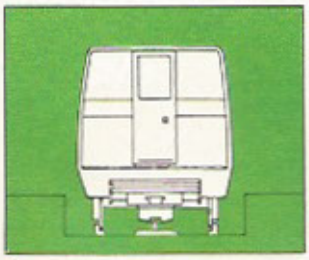


Here are three different ways an electric locomotive can get power.



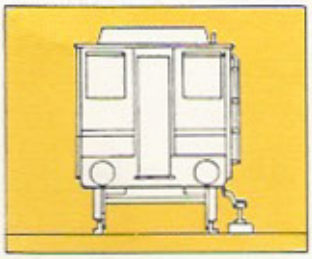
Pantograph going to overhead cable

or



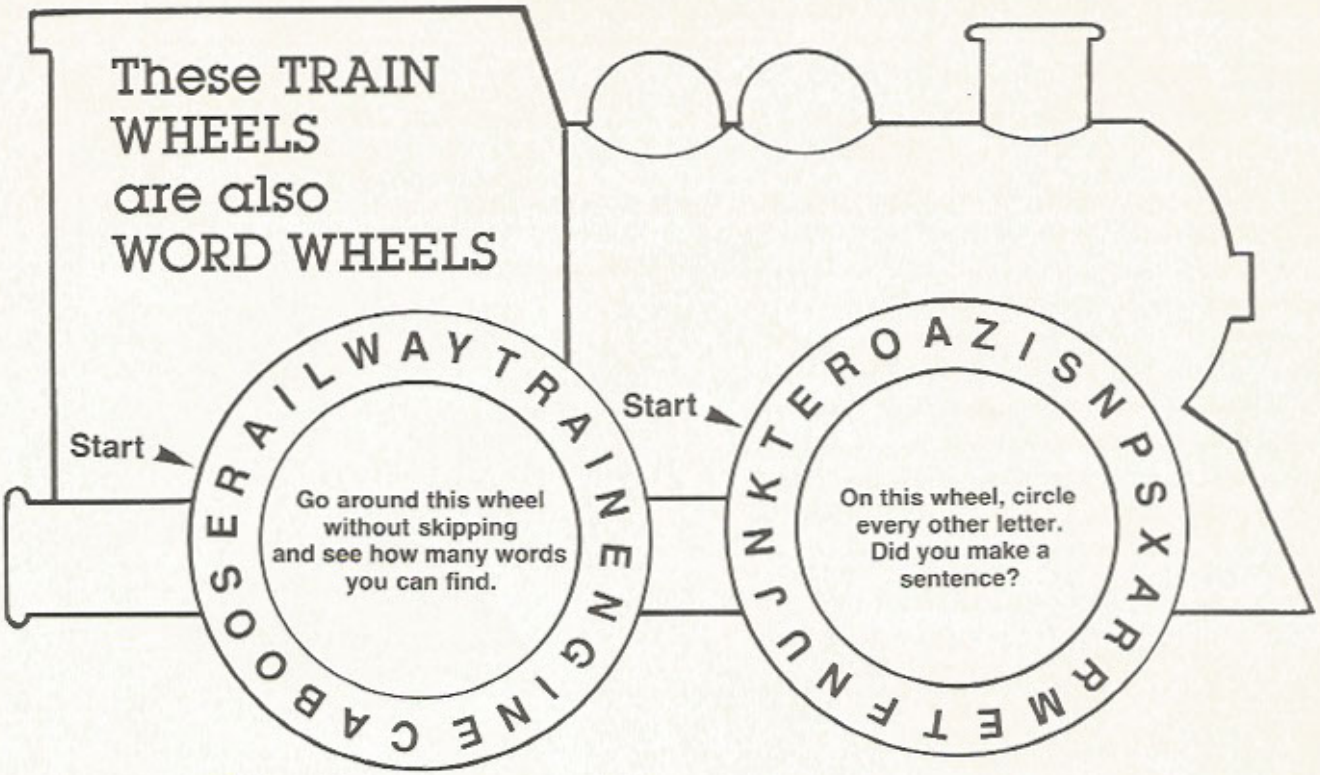
Central third rail

or



Side third rail

These TRAIN WHEELS are also WORD WHEELS



Did you find more than 10 words?
How many more?

Do you agree with the sentence?
You can color this train too.

BRIO **Engineers Club**

LOCAL STATION MASTER

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TO ENGINEER

HERE'S YOUR NEWSLETTER